

### **REMARKS**

Applicant respectfully requests reconsideration. Claims 1, 3-37 and 39-46 were previously pending in this application. By this amendment, Applicant is claim 23 and non-elected claims 39-44. Applicant has amended claims 1, 3-13, 16-19, 21, 22, 24-27, 30, 31, 37, 45 and 46. New claim 47 was added. As a result, claims 1, 3-22, 24-37 and 44-47 are pending for examination.

The amendments that have been made to the claims are set out below.

- Claim 1 has been redrafted using Markush terminology to clarify that the claimed composition comprises three ingredients.
- Claims depending directly or indirectly on claim 1 have been amended for clarity and consistency with the amendments made to claim 1.
- Claim 26 has been amended to specify that the polymeric composition comprises one or more polymeric materials. Support for this amendment is found on page 12 lines 25 to 27 of the description.
- Claim 45 has been amended to remove the recitation of an organic coating; this part of claim 45 is now recited in new claim 47.

No new matter has been added.

### **Rejections Under 35 U.S.C. § 112**

The Examiner rejected claims 1, 3-37 and 45-46 under 35 U.S.C. § 112, second paragraph, as indefinite. Applicant respectfully requests reconsideration.

Claim 1 has been amended to clarify that the claimed composition comprises three types of ingredient, which are numbered (i) to (iii) in that claim. It is evident that the claimed composition comprises two types of metal oxide ingredient, namely a doped or reduced metal oxide [part (ii) of the claimed composition] and an undoped and non-reduced metal oxide [part

(iii) of the claimed composition]. Claim 1 therefore clearly sets out the subject matter of the claimed invention.

Accordingly, withdrawal of the rejection is respectfully requested.

### **Rejections Under 35 U.S.C. § 102**

1. The Examiner maintained the rejection of claims 1, 11-24, 26-29, 35 and 37 under 35 U.S.C. § 102(b) as being anticipated by Mitchnick et al. (U.S. Patent No. 5,441,729). Applicant respectfully requests reconsideration.

Claim 1 is directed to a composition that comprises three different ingredients. These three ingredients are:

- (i) an ingredient which is adversely affected by UV light in the presence of a metal oxide selected from TiO<sub>2</sub>, ZnO, and mixtures thereof;
- (ii) a doped or reduced metal oxide selected from (a) TiO<sub>2</sub> doped with a dopant element, (b) ZnO doped with a dopant element, (c) reduced ZnO and (d) mixtures of two or more thereof; and
- (iii) an undoped and non-reduced metal oxide selected from TiO<sub>2</sub>, ZnO and mixtures thereof.

As explained in the previous response submitted by Applicant, there is no single example of a composition in Mitchnick *et al.* that comprises all three of these ingredients. Therefore, claim 1 is not anticipated by Mitchnick *et al.*

Accordingly, withdrawal of this rejection is respectfully requested.

2. The Examiner maintained the rejection of claims 1, 3-5, 7-8, 11, 16-20, 26-35 and 37 under 35 U.S.C. §102(b) as being anticipated by Chopoorian (U.S. Patent No. 3,314,321). Applicant respectfully requests reconsideration.

Chopoorian describes photochromic compositions comprising an inorganic photochromic material (see claim 1). Suitable photochromic materials include “*TiO<sub>2</sub> doped with Fe<sub>2</sub>O<sub>3</sub>, FeO, Cr<sub>2</sub>O<sub>3</sub>, CuO, NiO, MnO<sub>2</sub> or Mn<sub>2</sub>O<sub>3</sub>;...ZnO doped with CuO or V<sub>2</sub>O<sub>5</sub>*” as described in column 3 lines 44 to 48. Chopoorian does not, however, disclose a composition comprising both a doped or reduced metal oxide [as recited in part (ii) of instant claim 1], and an undoped and non-reduced metal oxide [as recited in part (iii) of instant claim 1]. Claim 1 is not therefore anticipated by Chopoorian.

Accordingly, withdrawal of this rejection is respectfully requested.

### **Rejections Under 35 U.S.C. § 103**

1. The Examiner rejected claims 10, 36 and 45 under 35 U.S.C. § 103(a) as being unpatentable over Mitchnick et al. (U.S. Patent No. 5,441,729). Applicant respectfully requests reconsideration.

Claim 1 as amended herewith makes it explicitly clear that the claimed composition comprises three ingredients, including, as recited in part (ii), a doped or reduced metal oxide, and, as recited in part (iii), an undoped and non-reduced metal oxide.

In examining the claims, the Examiner did not consider the feature of a doped or reduced metal oxide (part (ii)) to be present in, or a feature of, claim 1. Thus Applicant's prior arguments for the non-obviousness of claim 1 in view of Mitchnick *et al.* were based on a feature that was deemed by the Examiner not to be present in claim 1. The feature of a doped or reduced metal oxide is now clearly present in claim 1 and the Examiner is respectfully requested to reconsider

Applicant's prior arguments with regard to the non-obviousness of claim 1 in view of Mitchnick *et al.*, which are restated below for the convenience of the Examiner.

The present invention is based on the finding that doped TiO<sub>2</sub> and/or doped or reduced ZnO mitigates the damaging effect of non-doped TiO<sub>2</sub> and/or non-doped or non-reduced ZnO on other ingredients in a composition following exposure to ultraviolet light. The inclusion of non-doped TiO<sub>2</sub> and/or non-doped or non-reduced ZnO in a composition is beneficial because they provide both an additional UV light absorbing material and a pigment for the color matching of the composition.

Mitchnick *et al.* is primarily concerned with the shape of the zinc oxide (i.e. rod-shaped) particles in UV screening compositions. The rod-shape of the particles in such compositions is believed to provide improved UV protection because the shape of the particles allows them to "assume a side-by-side arrangement or a criss-cross-packing arrangement..., such that there are relatively few gaps between the particles for UV rays to penetrate." See column 1, lines 63 to 68.

Mitchnick *et al.* describes the preparation of doped zinc oxide particles, but there are no examples or data that show any benefit of doping. Mitchnick *et al.* merely speculates that "doping may increase the UV absorbance properties of the rods" (column 7, lines 34 to 36). The Examiner has noted that the zinc oxide rods in this document may optionally be combined "with other metal oxides, e.g. titanium oxides", see column 11, lines 25 to 26. However, there is no explicit reference to combining doped zinc oxide with non-doped titanium dioxide as is claimed. There is nothing in Mitchnick *et al.* that would motivate the skilled worker to replace the non-doped zinc oxide in a composition or formulation of the examples with doped zinc oxide.

Even if the non-doped zinc oxide was replaced with doped zinc oxide in the compositions and formulations of the examples of Mitchnick *et al.*, then the claimed composition still would not be obtained. The examples in Mitchnick *et al.* relate to compositions or formulations that contain non-doped zinc oxide and either (a) an organic sunscreen agent (see column 12, lines 1 to 14), or (b) non doped titanium dioxide (see the second table in column 12 and the tables in column 13). The only organic sunscreen agent described in Mitchnick *et al.* is octyl

methoxycinnamate, which is an ingredient that is adversely affected by UV light in the presence of TiO<sub>2</sub> and/or ZnO as in the composition of claim 1. Notably, there are no examples in Mitchnick *et al.* that contain both non-doped TiO<sub>2</sub> and octyl methoxycinnamate, as well as non-doped zinc oxide. Mitchnick *et al.* appreciates that the presence of non-doped TiO<sub>2</sub> in a composition has an adverse effect on the organic sunscreen ingredient. Thus, a person skilled in the art would not modify the compositions or formulations exemplified in Mitchnick *et al.* to include both non-doped TiO<sub>2</sub> and an organic sunscreen agent, as well as doped zinc oxide.

Finally, Mitchnick *et al.* does not describe compositions comprising doped titanium dioxide. Thus, this document does not render obvious the instant claims insofar as it relates to compositions comprising doped TiO<sub>2</sub>, and TiO<sub>2</sub> that is not doped and/or ZnO that is not doped or reduced, as claimed in the present application.

2. The Examiner maintained the rejection of claims 6, 17-18 and 21 under 35 U.S.C. § 103(a) as being unpatentable over Chopoorian (U.S. Patent No. 3,314,321). Applicant respectfully requests reconsideration.

Applicant notes that this objection was not made out against previous claim 2, which recited that the composition further comprised undoped and non-reduced TiO<sub>2</sub>, ZnO or mixtures thereof. This feature is clearly present in claim 1 as filed herewith and, accordingly, the claims dependent from claim 1 are not obvious over the Chopoorian reference .

3. The Examiner maintained the rejection of claim 9 under 35 U.S.C. § 103(a) as being unpatentable over Mitchnick *et al.* in view of Knowland *et al.* (WO 99/60994). Applicant respectfully requests reconsideration.

The objection based on Mitchnick *et al.* combined with Knowland *et al.* was not set out against previous claims 1 and 2. Applicant submits that claim 9, which depends from and

contains the features of claim 1, therefore is not obvious from Mitchnick *et al* combined with Knowland *et al*.

Accordingly, in view of the foregoing arguments, withdrawal of the obviousness rejections made under 35 U.S.C. § 103(a) is respectfully requested.

### **Double Patenting Rejections**

Non-statutory obviousness-type double patenting objections were raised against the claims based on copending US application numbers 10/540,649, 10/588,071, 10/555,570, 11/054,188 and 11/207,408. A non-provisional objection was also raised against the claims based on US 6,869,596. The Examiner did not regard the feature of an undoped and non-reduced metal oxide as being present in claim 1. Applicant's prior arguments in response to the double patenting objections were based on the presence of this feature. This feature is now clearly present in claim 1 and the Examiner is respectfully requested to reconsider Applicant's prior arguments with regard to the double patenting objections, which are restated below for the convenience of the Examiner.

Applicant also notes that the Examiner asserts that the double patenting rejection based on US 6,869,596 was mistakenly written in the prior Office Action. While Applicant appreciates that typographical errors are easy to make and also appreciates the Examiner's acknowledgement of this error, Applicant nevertheless does not agree that it bears the responsibility of determining what patent the Examiner had in mind when making the rejection.

It is the Examiner's burden to set forth the rejection in the Office Action. With respect to double patenting rejections, the MPEP states that "[i]n determining whether a nonstatutory basis exists for a double patenting rejection, the first question to be asked is - does any claim in the application define an invention that is anticipated by, or is merely an obvious variation of, an invention claimed in *the patent*? If the answer is yes, then an "obviousness-type" nonstatutory

double patenting rejection may be appropriate. MPEP § 804, emphasis added. Without setting forth which patent the Examiner is basing the rejection on (“*the patent*”), the Examiner has not met the required burden.

Therefore, the instant Office Action does not properly contain a final rejection of the claims under the standard stated in MPEP 706.07(a), which states that “second or any subsequent actions on the merits shall be final, *except where the examiner introduces a new ground of rejection* that is neither necessitated by applicant’s amendment of the claims, nor based on information submitted in an information disclosure statement” (emphasis added). The Examiner has acknowledged the error in citing the patent number, and bases the fifth obviousness-type double patenting rejection on a *different* patent, which Applicant submits is a new ground of rejection. Therefore, Applicant respectfully requests that the Examiner withdraw the finality of the rejection and refund the fees required for the filing of the accompanying Request for Continued Examination.

1. The Examiner provisionally rejected claims 1, 4-29 and 45 on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-25 of copending Application No. 10/540,649.

The amendment to claim 1 is believed also to provide a distinction over claims 1-25 of copending Application No. 10/540,649. Therefore, the instant claims are asserted to be non-obvious with respect to claims 1-25 of copending Application No. 10/540,649.

In the event that the Examiner does not agree with the distinction noted above, the Examiner is respectfully requested to defer further consideration of the double patenting objection until an allowable set of claims have been obtained in this application.

2. The Examiner provisionally rejected claims 1, 3-36 and 45 on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 8, 10-12, 16-20, 24-32, 34, 36, 50-52 and 54-55 of copending Application No. 10/588,071.

The amendment to claim 1 is believed also to provide a distinction over claims 8, 10-12, 16-20, 24-32, 34, 36, 50-52 and 54-55 of copending Application No. 10/588,071. Therefore, the instant claims are asserted to be non-obvious with respect to claims 8, 10-12, 16-20, 24-32, 34, 36, 50-52 and 54-55 of copending Application No. 10/588,071.

In the event that the Examiner does not agree with the distinction noted above, the Examiner is respectfully requested to defer further consideration of the double patenting objection until an allowable set of claims have been obtained in this application.

3. The Examiner provisionally rejected claims 1 and 3-36 on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-14, 16-23, 27 and 28 of copending Application No. 10/555,570.

The amendment to claim 1 is believed also to provide a distinction over claims 1-14, 16-23, 27 and 28 of copending Application No. 10/555,570. Therefore, the instant claims are asserted to be non-obvious with respect to claims 1-14, 16-23, 27 and 28 of copending Application No. 10/555,570.

In the event that the Examiner does not agree with the distinction noted above, the Examiner is respectfully requested to defer further consideration of the double patenting objection until an allowable set of claims have been obtained in this application.

4. The Examiner provisionally rejected claims 1, 3-25 and 45 on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-14, 16-17 and 20-21 of copending Application Nos. 11/054,188 and 11/207,408 in view of Mitchnick et al.



The amendment to claim 1 is believed also to provide a distinction over claims 1-14, 16-17 and 20-21 of copending Application Nos. 11/054,188 and 11/207,408 in view of Mitchnick et al. Therefore, the instant claims are asserted to be non-obvious with respect to claims 1-14, 16-17 and 20-21 of copending Application Nos. 11/054,188 and 11/207,408 in view of Mitchnick et al.

In the event that the Examiner does not agree with the distinction noted above, the Examiner is respectfully requested to defer further consideration of the double patenting objection until an allowable set of claims have been obtained in this application.

5. The Examiner rejected claims 1, 3-6, 10-29 and 45 on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-4, 7-8 and 10 of U.S. Patent No. 6,869,569 in view of Mitchnick et al.

The amendment to claim 1 is believed also to provide a distinction over claims 1-4, 7-8 and 10 of U.S. Patent No. 6,869,569 in view of Mitchnick et al. Therefore, the instant claims are asserted to be non-obvious with respect to claims 1-4, 7-8 and 10 of U.S. Patent No. 6,869,569 in view of Mitchnick et al.

In the event that the Examiner does not agree with the distinction noted above, the Examiner is respectfully requested to defer further consideration of the double patenting objection until an allowable set of claims have been obtained in this application.

**CONCLUSION**

A Notice of Allowance is respectfully requested. The Examiner is requested to call the undersigned at the telephone number listed below if this communication does not place the case in condition for allowance.

If this response is not considered timely filed and if a request for an extension of time is otherwise absent, Applicant hereby requests any necessary extension of time. If there is a fee occasioned by this response, including an extension fee, that is not covered by an enclosed check, please charge any deficiency to Deposit Account No. 23/2825.

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Respectfully submitted,

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